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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,638	12/28/2001	Ranjit Gharpurey	TI-33516	5650
23494	7590	04/22/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			LE, NHAN T	
			ART UNIT	PAPER NUMBER
			2685	

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,638

Applicant(s)

GHARPUREY ET AL.

Examiner

Nhan T Le

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-23 is/are allowed.
- 6) ☒ Claim(s) 1,6-11,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 12-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figures 1, 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's admitted prior art.

As to claim 11, Applicant's admitted prior art teaches a direct conversion receiver (see fig. 1, number 10, page 2, lines 30-31, comprising: a variable gain amplifier operative to amplify an input signal derived from a radio frequency (RF) signal (see fig. 1, number 22, page 3, lines 3-4), the gain of the amplifier being adjustable based on a gain control signal from an associated digital system (see fig. 1, numbers 12, 14, page 3, lines 3-4); a filter operative to filter an amplified signal of the amplifier and provide a filtered output signal (see fig. 1, number 18, page 3, lines 2-3); and a speed-up control system that generates a speed-up control signal in response to changes in the gain control signal from the associated digital system and, the speed-up control system

providing the speed-up control signal to the filter to adjust filter characteristics of the filter (see fig. 1, number 14, page 3, lines 8-10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6, 7, 8, 9, 10, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Eastmond (US 4,811,423).

As to claim 1, Applicant's admitted prior art teaches an analog speed-up and gain control system, comprising a speed-up circuit that receives a gain control input signal from associated digital circuitry and generates a speed-up control signal in response to changes in the gain control input signal (see fig. 1, number 14, page 2, line 30- page 3, line 4). However, Applicant's admitted prior art fails to teach a delay circuitry that receives the gain control input signal and outputs a delayed gain control signal according to the gain control input signal. Eastmond teaches a delay circuitry that receives the gain control input signal and outputs a delayed gain control signal according to the gain control input signal (see fig. 2, number 44, col. 3, lines 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Eastmond into the system of Applicant's admitted prior art in order to control the gains of amplifiers (as suggested by Eastmond, col. 3, lines 11-13).

As to claim 6, Applicant's admitted prior art teaches the filter network comprising at least one variable gain amplifier operative to amplify an input signal according to a gain selected based on the delayed gain control signal (see fig. 1, numbers 22, page 3, lines 3-4).

As to claim 7, Applicant's admitted prior art teaches the filter network further comprising at least one filter operatively coupled to receive the amplified signal from the amplifier, the associated filter having a filtering characteristic that varies based on the speed-up control signal (see fig. 1, numbers 18, page 3, lines 2-3).

As to claims 8, 9, Applicant's admitted prior art also teaches the filter comprising a high-pass filter, wherein the filtering characteristic comprising a corner frequency of the high-pass filter (see fig. 1, numbers 18, page 2, lines 25-27).

As to claim 10, Applicant's admitted prior art teaches the combination of claim 6 implemented as an analog section of a direct conversion receiver (see page 3, lines 5-6).

As to claim 16, Applicant's admitted prior art fails to teach the delay system operative to impose a delay associated with changes in the gain control signal and provide a corresponding delayed gain control signal to adjust the gain of the variable gain amplifier. Eastmond teaches the delay system; operative to impose a delay associated with changes in the gain control signal and provide a corresponding delayed gain control signal to adjust the gain of the variable gain amplifier (see fig. 2, numbers 30, 44, col. 3, lines 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Eastmond into

the system of Applicant's admitted prior art in order to control the gains of amplifiers (as suggested by Eastmond, col. 3, lines 11-13).

3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Eastmond (US 4,811,423) and in further view of Van Acquoij (US 5,909,243).

As to claim 17, the combination of Applicant's admitted prior art and Eastmond fails to teach the delay system comprising a low pass filter. Van Acquoij teaches the delay circuit is a low pass filter (see fig. 1a, number 20, col. 4, lines 1-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Van Acquoij into the system of Applicant's admitted prior art and Eastmond in order to delay the output signal by a predetermined time (as suggested by Van Acquoij, see col. 4, lines 1-5).

Allowable Subject Matter

Claims 2-5, 12-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding to claims 2, 12, the applied reference fails to teach a differentiator that receives the gain control signal and provides a differentiated signal as a function of the gain control signal; and a pulse generator that generates the speed-up control signal based on the differentiated signal indicating a change in the gain control signal.

Claims 18-23 are allowed.

Regarding to claim 18, Eastmond (US 4,811,423) teaches SSB receiver with improved feedforward AGC, Harrison et al (US 5,677,962) teaches hybrid analog and digital amplifier with a delayed step change in the digital gain, Gutleber (US 4,457,007) teaches multipath interference reduction system. The teaching of these prior arts either combine or alone fails to teach an analog speed-up control system for a direct conversion receiver, comprising a differentiator that receives a gain control signal from associated digital controls and provides a differentiated signal as a function of the gain control signal; and a pulse generator that generates the speed-up control signal based on the differentiated signal so as to control a filter characteristic of at least one associated filter.

Dependent claims 19-21 are allowed for the same reason.

Regarding to claim 22, Eastmond (US 4,811,423) teaches SSB receiver with improved feedforward AGC, Harrison et al (US 5,677,962) teaches hybrid analog and digital amplifier with a delayed step change in the digital gain, Gutleber (US 4,457,007) teaches multipath interference reduction system. The teaching of these prior arts either combine or alone fails to teach a method for implementing speed-up mode control for an analog portion of a direct conversion receiver based on an input gain control signal provided by an associated digital portion the receiver, the method comprising differentiating the input gain control signal to provide a differentiated signal; generating a speed-up control signal based on the differentiated signal indicating a change in the input gain control signal.

Dependent claim 23 is allowed for the same reason.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hongo et al (US 6,366,765) teaches receiver.

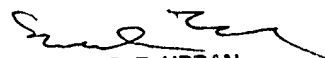
Kang et al (US 6,496,927) teaches automatic gain control method for highly integrated communication receiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T Le whose telephone number is 703-305-4538. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nhan T. Le


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